

ABSTRACT OF THE DISCLOSURE

A solution for detecting and recovering from a failure in a protected single-fiber passive optical network. A detector is used to detect the degradation in power level of optical signals. Furthermore, the invention discloses a variable symmetric split ratio approach to improve the number of splits (e.g. the number of ONUs). A single-fiber passive optical network is disclosed that uses a plurality of passive nodes connected in the optical fiber between the interfaces, wherein in the passive nodes 2-by-2 splitters/combiners are used to couple optical power from and into the optical fiber at a predetermined split ratio.